RARE X
Sustainable Rare Earths

60 Nd Neodymium | 59 Pr Praseodymium | 15 P Phosphorus

ASX Release
30 March 2023

Substantial increase in Cummins Range "Rare Dyke" Mineral Resource to 397Mt at 0.33% TREO, 4.2% P_2O_5 – 1.3Mt of contained TREO, 16.7Mt of P_2O_5

500% increase from the 2021 Mineral Resource Estimate, driven by highly successful 2022 drilling campaign, establishes Cummins Range as second largest undeveloped Australian rare earths deposit.

Highlights

- Updated Indicated and Inferred Mineral Resource Estimate (MRE) completed for the "Rare Dyke" at RareX's 100%-owned Cummins Range Rare Earths-Phosphate-Niobium Project:
  - **397Mt at 0.33% TREO and 4.2% P_2O_5,** for a total of 1.3 million tonnes of contained TREO and 16.7 million tonnes of contained P_2O_5 estimated by industry expert CSA Global
  - 2.5% P_2O_5 cut used instead of a TREO cut due to highly successful 2022 drilling campaign and new understanding of the deposit as a very large rare earths rich phosphate system
- **500% increase in contained TREO and 800% increase in P_2O_5 compared with the 2021 MRE**
- Updated MRE positions Cummins Range as the second largest undeveloped Australian rare earths project
- High-value NdPr content represents an excellent 21% of total contained TREO with 280Kt of NdPr contained
- Attractive Basket Price of US$33/kg based on US$110/kg NdPr
- Increased confidence in the geological model, with 44Mt in the Indicated category
- Phosphate characteristics are highly favourable for organic phosphate production with potential to also use in lithium iron phosphate (LFP) batteries
- Phos Dyke MRE due in late April, expected to result in further significant resource growth
- Updated Cummins Range Scoping Study underway using the updated MRE

Australian sustainable rare earths company, RareX Limited (ASX: REE) (**RareX** or **the Company**), is pleased to report an updated Mineral Resource Estimate (**MRE**) for its 100%-owned **Cummins Range Rare Earths-Phosphate Project** in the Kimberley region of Western Australia.

The first instalment of the updated Cummins Range MRE is based on the Rare Dyke and contains an Indicated and Inferred Mineral Resource of 397Mt at 0.33% TREO (total rare earths oxide) and 4.2% P_2O_5 (phosphate) with appreciable quantities of niobium and scandium. The amount of contained TREO is 1.3Mt with 280Kt of contained NdPr. This represents an increase of 500% from the previous MRE in 2021, which is highly significant growth for RareX over a 2-year period.

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Table 1. Cummins Range Mineral Resource Estimate, $P_2O_5 \geq 2.5\%$

Classification	Tonnes (Mt)	P_2O_5 (%)	TREO + Y_2O_3 (ppm)	HREO (ppm)	Nd_2O_3 (ppm)	Pr_6O_{11} (ppm)	Nb_2O_5 (ppm)	Sc_2O_3 (ppm)	ThU (ppm)
Indicated	44.3	6.3	5,800	290	930	280	1,020	100	90
Inferred	352.9	3.9	2,960	165	490	140	570	70	40
Total	397.2	4.2	3,270	180	540	160	620	70	50

Notes:
1. Due to effects of rounding, the total may not represent the sum of all components.
2. TREO (ppm) includes: La2O3, CeO2, Pr6O11, Nd2O3; and Heavy Rare Oxides (HREO): Sm2O3, Eu2O3, Gd2O3, Tb4O7, Dy2O3, Ho2O3, Er2O3, Tm2O3, Yb2O3, Lu2O3; + Y2O3
3. ThU comprises ThO2 + U3O8 (ppm)
4. Mineral Resource is reported from all blocks, classified as either Indicated or Inferred, where interpolated block grade is >2.5%P2O5

The relatively high NdPr and HREO (heavy rare earth oxide) content at Cummins Range is consistent with that of monazite dominant mineralisation, resulting in an attractive Basket Price of US$33/kg for the Project as shown below:

Table 2. Rare Dyke Mineral Resource-Based Basket Price

Element	Price US$/kg	% of TREO	Basket Price US$/Kg	% of Basket Price
LREO				
La_2O_3	1.1	24.8%	0.3	0.8%
CeO_2	1.1	45.9%	0.5	1.5%
Pr_6O_{11}	110.0	4.9%	5.4	16.3%
Nd_2O_3	110.0	16.4%	18.1	54.8%
Sub-Total		92.0%	24.2	73.4%
HREO				
Sm_2O_3	2.5	2.2%	0.1	0.2%
Eu_2O_3	26.0	0.6%	0.1	0.4%
Gd_2O_3	36.0	1.4%	0.5	1.5%
Tb_4O_7	2,300.0	0.2%	3.6	11.0%
Dy_2O_3	595.0	0.7%	4.2	12.7%
Ho_2O_3	-	0.1%	-	0.0%
Er_2O_3	-	0.2%	-	0.0%
Tm_2O_3	-	0.0%	-	0.0%
Yb_2O_3	-	0.1%	-	0.0%
Lu_2O_3	-	0.0%	-	0.0%
Y_2O_3	10.0	2.5%	0.3	0.8%
Sub-Total		8.0%	8.8	26.6%
Total Basket Price				
US$/kg			**33.0**	

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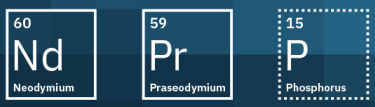

Complementing the increase in TREO is the very large phosphate resource of 16.7Mt of contained P_2O_5. The updated Rare Dyke MRE includes 44Mt at 6.3% P_2O_5 in the higher-confidence Indicated category, which is mostly contained in the upper 100m.

A significant increase in the phosphate tonnes is also expected from the Phos Dyke MRE, which is anticipated to be completed in late April. When the Phos Dyke MRE is complete, a global resource containing both the Rare and Phos Dykes will be announced.

A phosphate cut-off was chosen for the MRE as it better represents the geology and economic potential of the deposit in that it captures the phosphate and almost all of the rare earths.

Substantial quantities of phosphate will be mined to access rare earth mineral concentrations and RareX intends to extract value from both the phosphate and rare earths. In addition, the Company will investigate the value opportunities presented by the appreciable quantities of niobium and scandium present in the deposit.

Whilst elements of the pre-feasibility study (PFS) are underway, the aspects impacted by this updated MRE have been on hold and will be re-scoped following the final resource update in April. It is anticipated that the re-scoped PFS will initially be able to be presented as an updated Scoping Study, setting the scene for all PFS work streams.

Overview

RareX is pleased to present an updated Mineral Resource Estimate (MRE) for its 100%-owned Cummins Range Rare Earths-Phosphate Project in Western Australia. The Rare Earths and Phosphate MRE is on the Cummins Range Carbonatite Pipe at the Cummins Range Project, located 130km south-west of Halls Creek in the Kimberley region of Western Australia.

The 2km x 2km carbonatite pipe is entirely contained in tenement E80/5092, which also contains multiple geochemical and geophysical anomalies that have not been tested.

Since 2019, when founding Managing Director Jeremy Robinson started RareX, staged drilling campaigns have resulted in an increase in the geological understanding of the carbonatite system and a corresponding increase in the tonnages of contained TREO and P_2O_5.

The 2021 TREO resource estimate captured the regolith mineralisation on top of the Rare Dyke and parts of the Phos Dyke. Subsequent drilling has focused on extending the rare earths mineralisation into the fresh rock and increasing the tonnages of high-grade phosphate on the Phos Dyke at shallow depths.

Recent world events have put enormous strain on the world supply of phosphate, with the phosphate price increasing by 100% last year.

Compared to other igneous phosphate deposits in Australia and the world, Cummins Range has a significant advantage given its proximity to Wyndham Port on the northern Kimberley coast. The additional value of the phosphate will significantly enhance the economics of the project considering the pervasive occurrence of the mineral apatite throughout the 2km x 2km pipe and the ease of processing.

The additional 20,000m of drilling completed last year has resulted in a 500% increase in contained TREO compared with the 2021 MRE and an increase of almost 1,000% compared with the 2019 MRE.

The graph in Figure 2 below provides a comparison of the three resources RareX has completed, keeping in mind that the Phos Dyke resource is yet to be estimated in late April. The rare earths and phosphate mineralisation is open in all directions, and is likely only constrained by the boundaries of the pipe.

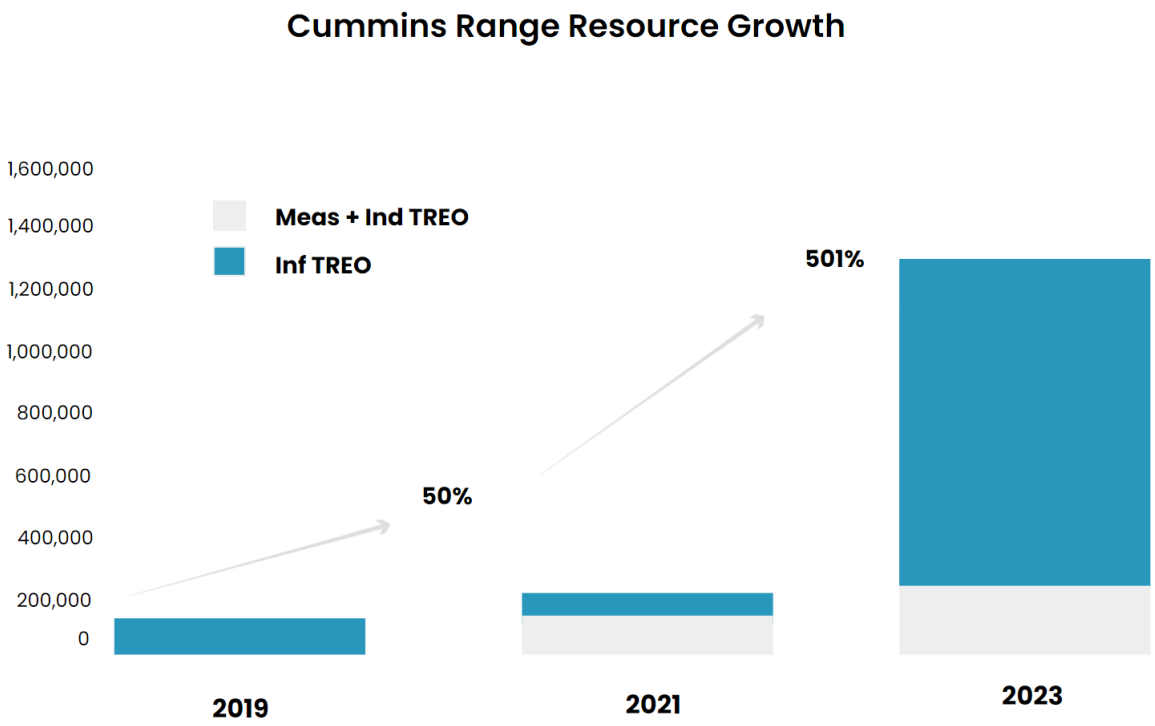

Figure 1. Contained Metal for the 2019, 2021 and 2023 Resources

Commenting on the Rare Dyke Mineral Resource, RareX Managing Director, Jeremy Robinson, said:

"Cummins Range has today been unequivocally confirmed as the second largest undeveloped rare earths deposit in Australia and as a potential long-term source of both rare earths and phosphate for Australia's critical minerals and agricultural industries.

"This is an exceptional result which positions RareX at the forefront of the critical minerals sector in Australia. I would like to thank our hard-working geological and project teams for their exceptional efforts over the past few years to get this point. The future for RareX is looking very exciting."

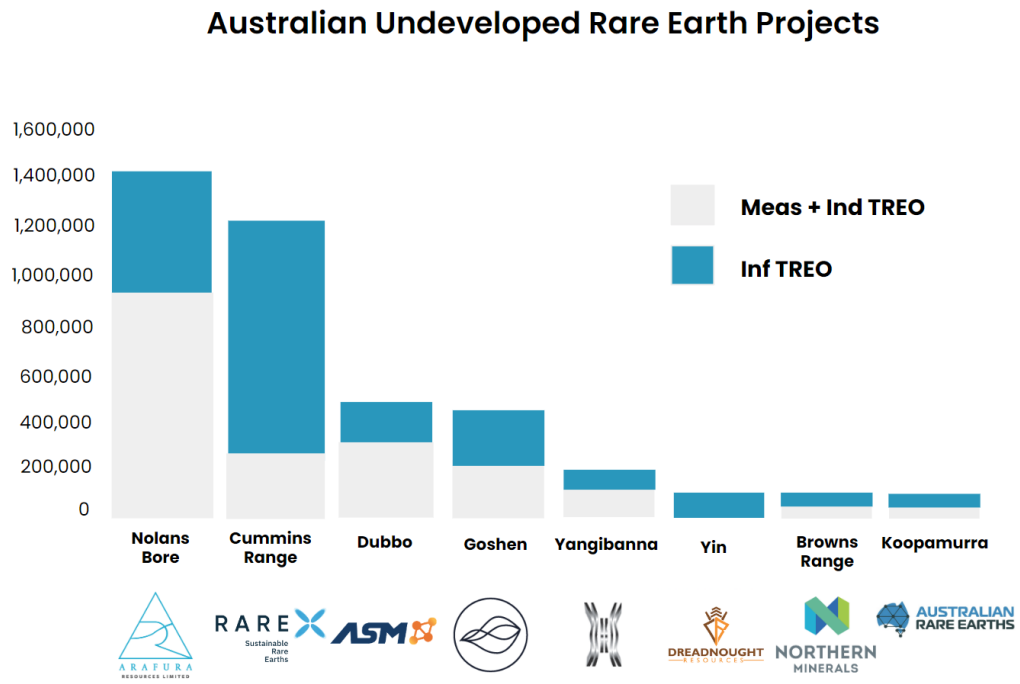

Figure 2. Contained TREO of Australian Rare Earth Projects

Company	Project	Meas + Ind TREO Contained	Inf TREO Contained	Total Contained TREO	Development Stage	Source
Arafura	Nolans Bore	977,200	483,000	1,460,200	Bankable FS	https://www.arultd.com/
RareX	Cummins Range	256,940	1,044,584	1,301,524	Preliminary FS	this release
Australian Strategic Minerals	Dubbo	316,794	239,538	556,332	Bankable FS	https://asm-au.com/
VHM	Goshen	238,700	270,900	509,600	Bankable FS	https://www.vhmltd.com.au/
Hastings	Yangibanna	220,410	57,225	277,635	Bankable FS	https://hastingstechmetals.com/
Dreadnought	Yin	-	166,576	166,576	Exploration	https://www.dreadnoughtresources.com.au/
Australian Rare Earths	Koppamurra	37,575	25,920	63,495	Exploration	https://ar3.com.au/
Northern Minerals	Browns Range	31,920	29,952	61,872	Bankable FS	https://northernminerals.com.au/

Project Location

The Cummins Range Rare Earth Project is located in the Kimberley region for Western Australia south-west of the town of Halls Creek, as shown below.

Access to the Project from Halls Creek is via the Great Northern Highway and then the Tanami Road to Ruby Plains station. From there, access is along station tracks. Halls Creek also has a sealed airstrip and connects to the ports of Wyndham and Darwin via the Great Northern Highway.

On 12 May 2022, the Western Australian Government announced that it has decided to seal the Tanami Road. The Western Australian State Budget 2022/23 has allocated an additional $100 million, alongside the

recently announced $400 million Federal allocation, to completely seal the Tanami Road in Western Australia.

The decision to seal the Tanami Road will improve safety, accessibility and flood resilience to better support communities and industries in the north-east of Western Australia. Along with a new access road planned for development later in 2023, the Tanami upgrade will help RareX develop steady-state operations throughout the year, in particular, during the wet season.

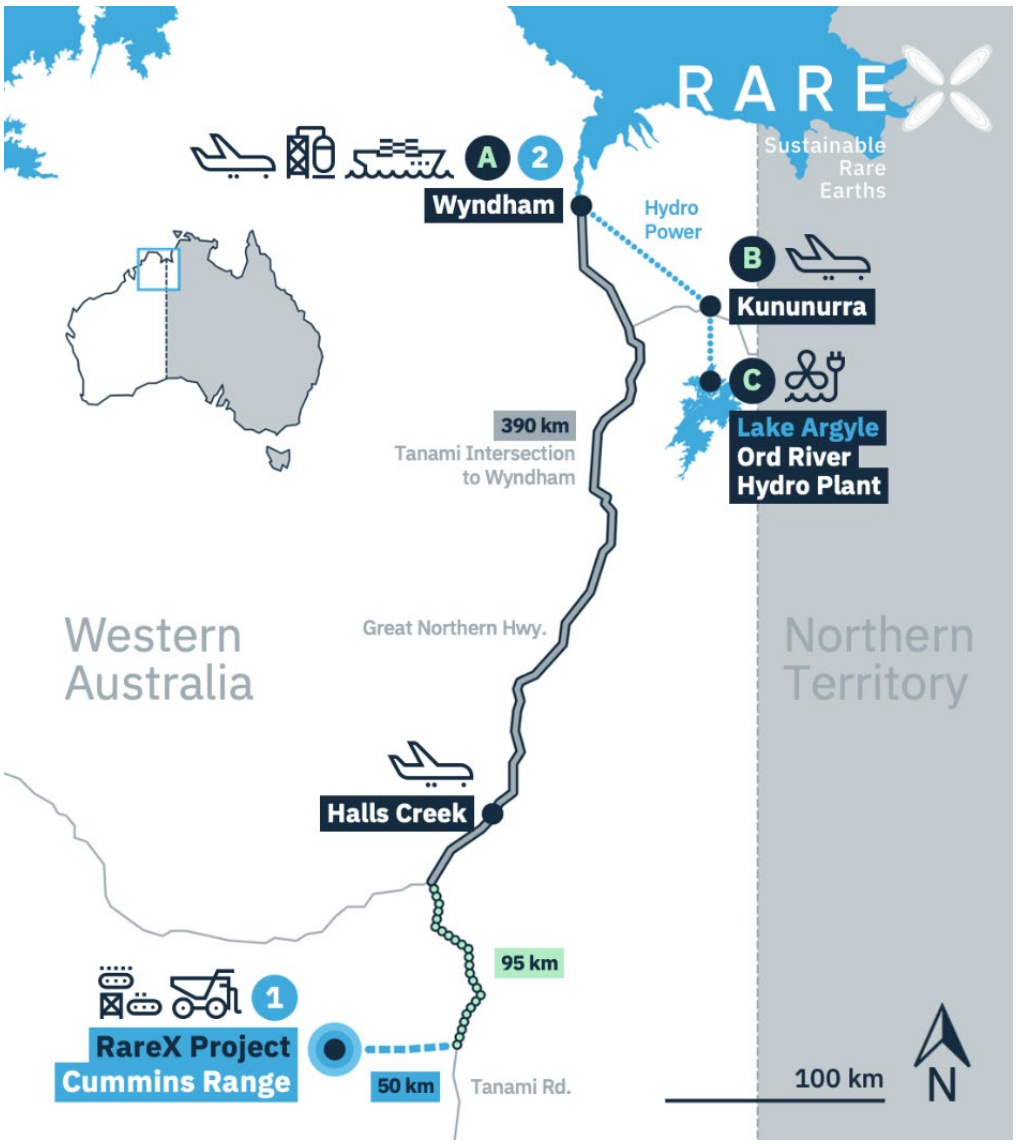

Figure 3. Map of Project Location and Key Project Infrastructure

Main Roads Western Australia has developed plans to seal the first 20km section south of the Great Northern Highway near Halls Creek in 2022. Detailed design, ground surveys and approvals are also planned or underway.

The infrastructure is ideally suited for bulk commodity transport and logistics with the Tanami Road upgrade meaning the whole supply chain will be on sealed roads. Wyndham Port is being upgraded and improved as a strategic port and the Ord River Hydro Power Station has reserve capacity for energy supply.

The Kimberley Port Authority has recently applied to the Commonwealth Government for Wyndham Port to be allocated as the port of first entry, setting the scene for a strategic upgrade of this important piece of infrastructure, which is already powered by hydro-electricity.

RareX is also collaborating with the agricultural industry in the region, with an MOU in place to develop a product roadmap with OrdCo, the distributors of fertilisers into the Ord River, and soon to be Carlton Plain, agricultural sectors. An MOU is also in place with Agrimin (ASX: AMN) to collaborate on product haulage, port handling and trans-shipment facilities.

Rare Dyke Resource

RareX engaged CSA Global, a member of the ERM Group of Companies to estimate an updated Mineral Resource Estimate (MRE) for the Cummins Range carbonatite dykes. The MRE is reported in accordance with the JORC Code (2012) and is shown in full in Table 1.

CSA Global is satisfied that the techniques and methods used by RareX are consistent with industry standards as stipulated by the JORC Code (2012). The quality assurance and quality control (QA / QC) supports the data that RareX has provided.

The MRE is considered to have reasonable prospects for eventual economic extraction on the following basis:

- the resource is situated in a favourable mining jurisdiction, with no known impediments to land access or tenure status;
- the volume, orientation and grade of the Mineral Resource is amenable to mining extraction via bulk tonnage open pit or underground mining methods;
- preliminary metallurgical test work shows extraction and concentration of rare earths and phosphate can be achieved using traditional processing techniques; and
- A Scoping Study was completed in September, 2022 (ASX release, 12th September, 2022), which outlines an open cut mine and flotation beneficiation facility at site producing a rare earth mineral concentrate and a phosphate mineral concentrate, which can be hauled along mainly sealed roads to Wyndham Port. The Scoping Study further demonstrated potential for economic extraction.

The phosphate Mineral Resource was estimated using ordinary kriging interpolation techniques and reported at a 2.5% P2O5 cut-off grade

The Rare Dyke MRE is estimated over 800m of north-west – south-east strike, 400m of width, and 500m down-dip.

The resource has been split in two, due to spatial and mineralogical differences. This MRE relates to the Rare Dyke, with the Phos Dyke resource to be reported in late April. Each of the Dykes has been reported as a regolith resource and a fresh rock resource, along with Mineral Resource confidence levels (Indicated or Inferred).

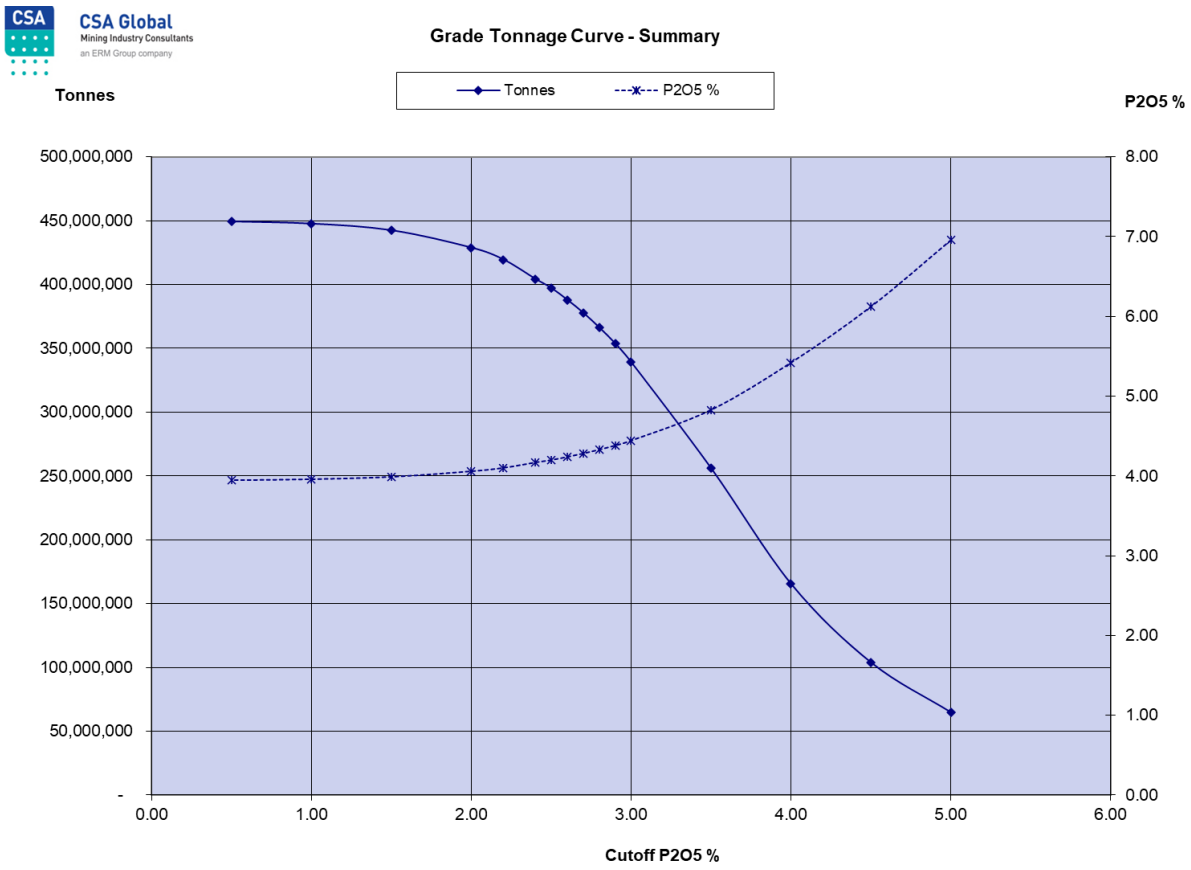

Figure 4. Cummins Range Grade Tonnage Curve for Phosphate

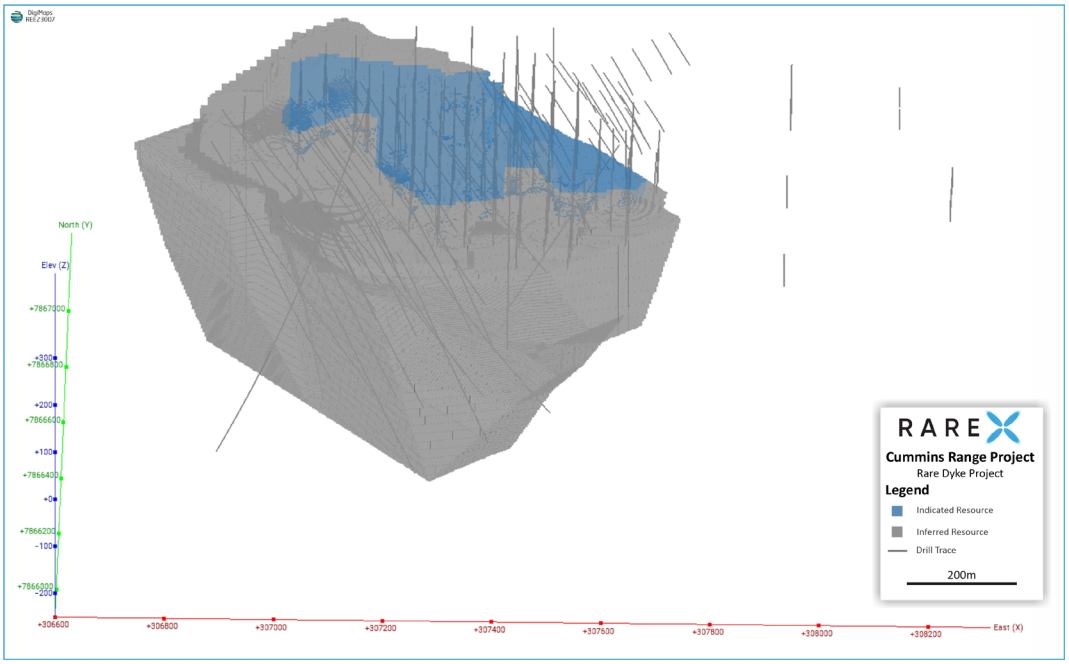

Figure 5. 3D image of Cummins Range Mineral Resource

Geology Model

The Cummins Range pipe is a phosphorous-rare earth rich system with phosphorous and rare earths mineralisation found in variable quantities over the entire pipe. Drilling in the north-western portion of the pipe is the focus of this MRE.

The Cummins Range deposit is centred around two sub-parallel carbonatite dykes strike at 320 degrees and dip at 60 degrees to the south-west. The Rare Dyke and the Phos Dyke have intruded into the clinopyroxenite forming large apatite rich carbonatised alteration holes.

Within the carbonatites and wall rock alteration zones are monazite-bastnaesite-parisite rich veins that reach up to >20m wide. These phosphorous, and rare earth rich rocks are present to significant depths with intersections drilled 600m below surface. The pyroxenites, carbonatites and alteration zones contain consistent disseminated to massive apatite and variable rare earths.

Sitting on top of the larger dyke (Rare Dyke) is a well-developed weathering profile hosting high grade rare earths, phosphate, scandium, and niobium mineralisation. The weathering profile can extend to greater than 100m depth. A combination of residual, or eluvial, chemical weathering and primary mineralisation has contributed to the strong enrichment of rare earths and phosphate.

A majority of the rare earths mineralisation in the regolith is contained in monazite with the remainder contained in bastnaesite and crandallite. Weathering processes have created an increase of monazite and apatite concentrations with portions of the regolith phosphate having potential for direct shipping ore (DSO).

Large volumes of apatite rich phoscorite surround the Phos Dyke with consistent low grade rare earths in the form of monazite. Many of the 2022 drill holes bottomed in phoscorite and the extent of this rock type is open to the north, east and south.

The geological model was simplified to three geological units:

1. Regolith – combination of all the domains in the regolith profile with the base of the weakly weathered oxidation boundary marking the lower boundary.
2. Ultramafic/pyroxenite – undifferentiated ultramafics, including altered ultramafics and phoscorite.
3. Carbonatite – dolomitic and calcic carbonatite.

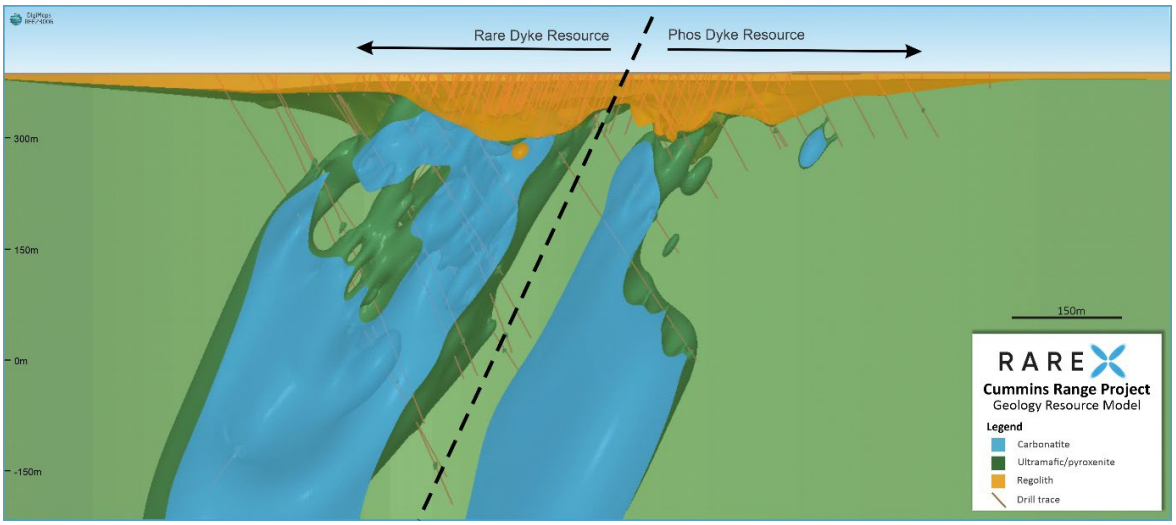

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Figure 6. 3D Image of Cummins Range Geology Model

Drilling Techniques

The drilling data base provided for the MRE was composed of data collected from three exploration companies, Navigator Resources Ltd, Kimberley Rare Earths Ltd and RareX Ltd. Table 3 below summarises the drilling completed on Cummins Range:

Table 3. Drill Hole used in the Cummins Range 2023 MRE

Company	Hole Type	No of Holes	Metres	Average Depth (m)	Year Drilled
Navigator	RC	93	9,293	100	2007
Kimberley Rare Earths	RC	77	4,229	55	2011
RareX	RC	111	13,113	118	2020-2022
	DDH	13	2,807	216	2021-2022
	RC/DDH	28	11,533	412	2021-2022
MRE Total		**322**	**40,975**		

Navigator and Kimberley Rare Earths drilled RC holes contributing 33% of the drilled metres in the MRE. The remaining 67% was drilled by RareX using RC and diamond drilling methods. RareX used a combination of RC and diamond drilling for 28 of the drill holes.

Sampling

Navigator Sampling

- Bulk samples were collected in green plastic bags, along with a 9:1 split from the cyclone.
- 4m composites were taken during the time of drilling using a PVC spear for dry samples and an aluminium scoop for wet samples.
- All composites that returned >1000ppm Ce were resampled on 1m intervals before commencement of the 2007 wet season. The 1m intervals were bagged from the drill rig 9:1 cone split.

Kimberley RC Sampling

- No details on RC sampling have been recorded for the 77 drill holes completed by Kimberley. All drilled metres were sampled on 1m intervals, and it is assumed Kimberley used industry standards, which is sampling the 1m split from the cyclone on the drill rig.

RareX RC Sampling

- For the 2020-2021 drill seasons the bulk sample was collected in green plastic bags and no split was taken. The cyclone was cleaned after every 3m drill run and where sticky clays were intersected, the driller would lift the hammer off the bottom and clean the cyclone after each metre. Wet samples were left open for water to evaporate.
- Sampling intervals were determined by geology with the aid of a Niton pXRF. Sample intervals ranged from 4m, 3m, and 2m composites in areas of no expected rare earths mineralisation. Mineralised zones were sampled on 1m intervals.
- The bulk bags were put through a 50/50 or 75/25 riffle splitter multiple times to achieve the desired 3kg sample. The splitter was cleaned between each sample and bulk samples were not put through the splitter until dry to avoid cross contamination.

- In the 2022 drill season instead of splinting the entire bulk bags as done in previous years, the cone split from the drill rig cyclone was used which is 5% to 8% of the metre drilled.

Sampling Analytical Methods and QA/QC

The analytical method used to assay has remained consistent through all the drilling used in the MRE with a peroxide fusion digest, with an ICP-OES and ICP-MS finish. 4-acid digest was used by navigator as a qualifier and is described below. Table 4 summaries the assay details for all the holes.

Table 4. Assay methods and laboratory for drill holes

Company	Holes	Sample Type	Laboratory	Analysis Method for REE, P, Sc, Nb
Navigator	NRC001-NRC093	4m Composites	Intertek	4 acid digest, ICP-OES and ICP-MS finish
Navigator	NRC001-NRC093	1m Samples	Intertek	Peroxide Fusion Digest, ICP-OES and ICP-MS finish
Kimberley	KRC094-KRC170	1m Samples	Intertek	Peroxide Fusion Digest, ICP-OES and ICP-MS finish
RareX	CRX0001-CRX0104 CDX0001-CDX0050	1-4m Samples	Nagrom	Peroxide Fusion Digest, ICP-OES and ICP-MS finish

Navigator assayed for 40 elements: Ag, Al, Ba, Ca, Ce, Cr, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ho, K, La, Lu, Mg, Mn, Nb, Nd, P, Pb, Pr, Sc, Si, Sm, Sr, Ta, Tb, Th, Ti, Tm, U, V, Y, Yb, Zn, Zr. Laboratory QA/QC makes up 10% of the assays.

Kimberley Rare Earths assayed for 30 elements: Al, Ca, Ce, Dy, Er, Eu, Fe, Ga, Gd, Ho, La, Lu, Mg, Nb, Nd, P, Pr, Sc, Sm, Ta, Tb, Th, Ti, Tm, U V, Y, Yb, Zr. Laboratory QA/QC was conducted and assessed during previous resource estimates. However, RareX have not been able to obtain the raw data.

RareX has assayed for 42 elements: Ba, Fe, Mg, Mn, Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nb, Nd, Pr, P, S, Si, Zr, Sm, Sn, Ta, Tb, Th, Tm, U, W, Y, Tb, Hf, Al, C, K, Ag, As, Be, Na, S, Sr, Zn, Li and Pb. RareX used standards, duplicates and blanks comprising 10% of the samples in RC assay batches and 6% in the diamond assay batches.

A batch of 178 pulps from all three of the RareX drill programs were sent to an alternate laboratory to be assay via Peroxide Fusion with ICP-OES and ICP-MS finish as umpire checks. The elements assayed were P, Sc, Zr, Ce, Ho, Sm, Y, Dy, Tb, Nb, Gd, Tm, Pr, La, Ta, Yb, Er, Lu, Eu, Th, Nd, Hf and U. The umpire checks confirmed the accuracy of the analytical batches from 2020-2022.

The competent person is of the opinion that the quality of control procedures adopted by Navigator, Kimberley Rare Earths, RareX and both the laboratories are of sufficient quality for an inferred and indicated mineral resource estimate.

Specific Gravity

During the 2021 and 2022 drill programs RareX exploration team completed regular SG measurements using the Archimedes Method. A total of 787 SGs were taken on numerous rock types in the regolith and fresh rock. Each SG sample was geologically logged and SGs were then divided into the geological domains and averaged. Table 5 below summarises the SG values applied in the mineral resource estimate.

Table 5. SG values applied to geological domains.

Ultramafic	Carbonatite	Regolith Cover	Regolith Pan	Regolith CW	Regolith SW	Regolith MW	Regolith WW
3.13	2.98	2	2.5	2.2	2.4	2.6	2.8

CW = Completely Weathered, SW = Strongly Weathered, MW = Moderately Weathered, WW = Weakly weathered

Cut off Grade

A cut off grade of 2.5% P_2O_5 was used in the Mineral Resource estimate. Due to the size of the Mineral Resource and the potential for a very long mine life, a 2.5% cut is considered appropriate. Other deposits of comparable size and grade in the world have use similar cuts.

The apatite at Cummins Range lends itself to form high quality rock phosphate. Being an igneous phosphate deposit the resource contains very low levels of potentially toxic elements allowing upgrading. The coarseness of the apatite and simple mineralogy should also assist concentration.

Metallurgy

Beneficiation testwork to date has been focused on both rare earth and phosphate concentration and samples from different dykes and zones were tested.

The majority of 2021 and 2022 testwork was targeted at achieving a TREO grade between 10% and 20%, with acceptable recovery. This was achieved and exceeded; and the results were used to support the 2022 scoping study[1]. The September 2022 scoping study outlines a 15% TREO monazite concentrate from metallurgical testing. Since September 2022, metallurgical programs in Australia and overseas have been focused on refining the process and results are expected in coming months.

Phosphate optimised beneficiation as a strong alternative to rare earth focused beneficiation is also being explored. Phosphate flotation tests on weathered and fresh rock material from the Phos Dyke have produced concentrate grades of >39% P_2O_5 with >80% recovery[2]. Although the phosphate flotation of the Phos Dyke materials were not focused on rare earths concentration, the results showed similar TREO recovery trend to P_2O_5 with recoveries >60%. Phosphate flotation on the Rare Dyke material is currently in progress with results expected in coming months.

Bioavailability tests of phosphate samples are up to 4 folds the industry high bioavailability standard indicating the potential to produce direct shipping ore and phosphate mineral concentrate[3].

Refining testwork carried out on the Rare Dyke material showed good amenability to conventional methods which demonstrated good rare earth extraction and impurity removal.

Estimation methodology

A block model constrained by the interpreted geological envelopes was constructed with a parent cell size of 12.5m (E) by 12.5m (N) by 5m (RL) adopted, with each cell dimension subdivided by a factor of 4 to achieve sub-celling to maintain the resolution of the geological domains. Samples composited to 1m length were used to interpolate oxide grades including Rare Earth oxide, P_2O_5, and Sc_2O_3 into the block model using ordinary kriging interpolation techniques. A search ellipse of 300m (X) by 300m (Y) by 70m (Z) was used to select

1 ASX release 12 September 2022; Positive Scoping Study for Cummins Range Shows Potential for Sustainable, Long-Life Rare Earths Project.
2 ASX release 04 October 2022; Metallurgical Testwork Delivers Premium Phosphate Concentrate from Cummins Range.
3 ASX release 23 March 2023; Phosphate Testwork Confirms Potential to Produce Direct-Application Fertilisers from DSO and Concentrate at Cummins Range.

samples for grade interpolation for P_2O_5, and 250m (X) by 150m (Y) by 50m (Z) for the Rare Earth Oxides, within the strongly weathered zone, which hosts the highest grade P_2O_5 and TREO population in the MRE. A minimum of 8 and maximum of 22 samples were used per block estimate. Block grades were validated both visually and statistically. All modelling was completed using Datamine software.

The following density values were assigned to each geological domain, with the mineralisation bearing domains assigned the following density values; cover (2.0t/m^3), pan (2.5t/m^3), completely weathered (2.2t/m^3), strongly weathered (2.4t/m^3), moderately weathered (2.6t/m^3), weakly weathered (2.8t/m^3), pyroxenite (3.13t/m^3) and carbonatite (2.98t/m^3). Results were derived from Archimedes method test work using diamond core billets.

Mineral Resource Classification

The Mineral Resource is classified as a combination of Indicated and Inferred, with the Mineral Resource reported in accordance with the JORC Code, with geological and sampling evidence sufficient to assume geological and grade continuity within the volumes classified as Indicated. The classification levels are based upon an assessment of geological understanding of the deposit, geological and grade continuity, drillhole spacing, quality control results, search and interpolation parameters, and an analysis of available density information. The Indicated volumes cover the volumes with 25m x 25m drill spacing, and Inferred covers volumes with up to 100m by 100m drill spacing.

Reasonable Prospects for Eventual Economic Extraction

The Cummins Range MRE is expected to have reasonable prospects for eventual economic extraction (RPEEE) on the following basis:

- the resource is situated in a favourable mining jurisdiction, with no known impediments to land access or tenure status;
- the volume, orientation and grade of the resource is amenable to mining extraction via open pit or underground mining methods;
- preliminary metallurgical test work shows extraction and concentration of rare earths and phosphate can be achieved with traditional processing techniques; and
- A Scoping Study was completed in September, 2022 (ASX release, 12th September, 2022), which outlines an open cut mine and flotation beneficiation facility at site producing a rare earth mineral concentrate and a phosphate mineral concentrate, which can be hauled along mainly sealed roads to Wyndham Port. The Scoping Study further demonstrated potential for economic extraction.

Potential To Grow Resource

The mineral resource will increase significantly in late April when the Phos Dyke MRE is completed.

The Cummins Range pipe is a phosphorous rare earths rich system with most drilled metres containing phosphate and rare earths mineralisation. The pipe extends over an area of 2km x 2km and the MRE is positioned in the western portion of the tenement and when the Phos Dyke MRE is competed the global MRE will cover 40% of the pipe. The remainder of the pipe has sparse drilling with most holes containing phosphate and rare earths.

In the below Figure 7, the Rare Dyke MRE is shown on the carbonatite pipe. The labelled drill holes are the RC holes that will not be included in the MRE. There are only 15 RC drill holes with a maximum depth of 49m. All

of these holes except one have significant phosphate and rare earths mineralisation and intercepts are shown in Table 6.

The nearest five RC drill holes (KRC134-KRC138) to the Phos Dyke mineralisation are 300m to the east. The holes range from 40m to 49m deep and all finished in strong mineralisation.

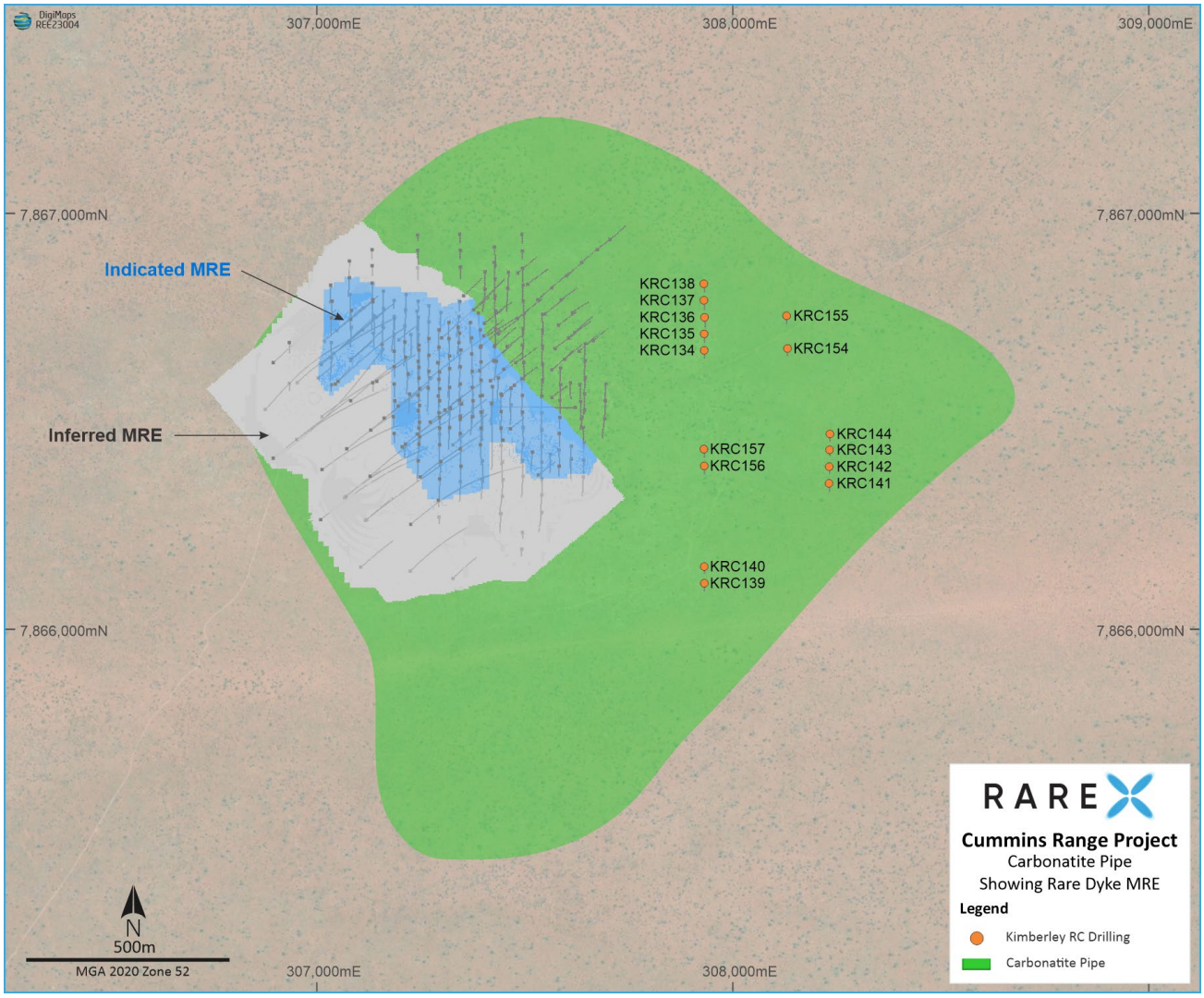

Figure 7. Cummins Range Pipe Plan

Table 6. Significant Intercepts for Historical Kimberley Rare Earth Drill Holes **(2.5% P2O5 Cut. TREO = Lanthanide oxides + Scandium Oxide + Yttrium Oxide)**

HoleID	Easting	Northing	mRL	Dip	Azimuth	Depth (m)	From (m)	To (m)	Interval (m)	TREO %	P_2O_5 %
KRC134	7866671	307931	391	-60	180	40	5	40	35	0.16	4
KRC135	7866710	307931	391	-60	180	40	5	40	35	0.19	5
KRC136	7866750	307932	391	-60	180	49	10	49	39	0.21	7
Incl.							19	35	16	0.27	10
KRC137	7866791	307930	391	-60	180	43	15	43	28	0.17	5
KRC138	7866831	307930	391	-60	180	40	12	40	28	0.22	4
KRC139	7866111	307931	391	-60	180	40	8	40	32	0.16	4
KRC140	7866151	307931	391	-60	180	34	26	34	8	0.9	3
KRC141	7866351	308231	391	-60	180	40	14	40	26	0.13	4
KRC142	7866391	308232	391	-60	180	34	No Significant Intercept				
KRC143	7866432	308232	391	-60	180	31	15	25	10	0.15	3
KRC144	7866470	308233	391	-60	180	37	23	37	14	0.5	3
Incl.							25	27	2	2.6	4
KRC154	7866675	308131	391	-60	180	37	17	37	20	0.11	4
KRC155	7866754	308129	391	-60	180	37	15	37	22	0.16	5
KRC156	7866393	307931	391	-60	180	40	7	39	32	0.14	4
KRC157	7866433	307930	391	-60	180	43	6	43	37	0.2	4

This announcement has been authorised for release by the Board of RareX Limited.

RARE X
Sustainable Rare Earths

60 Nd Neodymium | 59 Pr Praseodymium | 15 P Phosphorus

Competent Person's Statements

The information in this report that relates to Mineral Resources is based on, and fairly reflects, information compiled by Mr David Williams and Mr Guy Moulang. Mr. David Williams is a full-time employee of CSA Global and is a Member of the Australian Institute of Geoscientists. Mr Guy Moulang is a full-time employee of RareX Limited and is a Member of the Australian Institute of Geoscientists. Mr David Williams and Mr Guy Moulang have sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Mr David Williams and Mr Guy Moulang consent to the disclosure of the information in this report in the form and context in which it appears. Mr Guy Moulang assumes responsibility for matters related to Sections 1 and 2 of JORC Table 1, while Mr David Williams assumes responsibility for matters related to Section 3 of JORC Table 1.

The information in this report that related to Exploration Results is based on, and fairly reflects, information reviewed and compiled by Mr Guy Moulang. Mr Guy Moulang is a full-time employee of RareX Limited and is a Member of the Australian Institute of Geoscientists and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Mr Guy Moulang consents to the disclosure of the information in this report in the form and context in which it appears.

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About RareX Limited – ASX: REE

RareX Limited (ASX: REE) is a Perth-based rare earths company committed to becoming a near-term producer of neodymium and praseodymium (NdPr). RareX's focus is on developing rare earths deposits in Australia, including the flag-ship Cummins Range Rare Earths – Phosphate Project.

NdPr is a core enabler of decarbonisation of our society and enables low carbon technologies, especially in the electric mobility sector, robotics solutions and renewable energy, e.g. the wind energy sector. NdPr is the key raw material for manufacturing rare earth powered permanent magnet NdFeB electric motors, the heart of the next industrial revolution the Electrification of our Society.

RareX's focus is on developing rare earths deposits in Australia, including the Cummins Range Rare Earths Phosphate Project in the East Kimberley region of Western Australia. RareX is committed to developing a sustainable, ethical, transparent and secure low carbon rare earth supply chain solution for the global electric mobility market and NdFeB permanent motor downstream ecosystem.

For further information on the Company and its projects visit www.rarex.com.au

APPENDIX D

JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• Drilling history includes: • CRA Exploration (1978), Diamond drilling (DD) 2,400 m, plus 2,341m aircore (AC) and 302 m Rotary air blast (RAB). DD data was retained for geological modelling but assays not used for MRE. • Navigator Resources (2007), 148 AC holes (4510 m), 93 reverse circulation holes (RC) (9293 m). Holes drilled 60° towards south, 40 m spacing, • Kimberley Rare Earths (2012), 77 RC holes (4229 m) • RareX Limited (2020), 58 RC holes (6,146 m) • RareX (2021), 22 RC (1,440 m), 19 DD (3,830 m). Holes drilled towards 050° or 230°, orthogonal to the strike of the carbonatite pipe. • RareX (2022), 31 RC (3,943 m), 20 DD (10,473 m) • Navigator Drilling NRC001-NRC0093 (drilled in 2007); 4 m composite spear samples were taken and assayed. Assay intervals that returned results <1000ppm Ce were then resampled. The 10% cone splits from the drill rig were then used for the 1m re-assays. • Kimberly Rare Earths (KRE) Drilling KRC094-KRC0170 (2012) – All drill meters were assayed on 1 m intervals using a 10% cone split from the drill rig. • For RareX drilling:

Criteria	JORC Code explanation	Commentary
		○ CRX0001-CRX0070 – entire Bulk samples were split down into 1-4 m composites using a 50/50 or 75/25 riffle splitter. ○ CRX0071-CRX0104 – 7% cone split from the drill rig was used for 1-4 m composites. Composite samples were combined using a 50/50 riffle splitter. ○ CDX0001-CDX0050 - Diamond drill sizes used are PQ, HQ and NQ2. PQ drill core was quarter cored and HQ, NQ2 were half cored. Samples ranged from 0.3 m to 1.3 m. ○ The same portion of drill core was always sampled relative to the orientation line or cut line. ○ All RareX, Kimberley Rare Earth and rare earth mineralised samples from Navigator were taken using the cone splitter on the drill rig or a riffle splitter. ○ Mineralisation in the regolith was established using a Pxrf. ○ Fresh rock mineralisation is coarse and easily identifiable
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).*	• Drilling techniques used are reverse circulation (RC) drilling, and diamond drilling using PQ, HQ, and NQ2 diameter core sizes. • AC and RAB holes were not used to support the Mineral Resource model.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• The 2007-2012 samples (Navigator Resources and Kimberley Rare Earths Ltd) were collected as both 4m composites for initial assaying and 1m samples for follow up assaying of anomalous zones. Most holes had good sample recovery although a limited number of holes encountered high ground water inflow and karst type weathering in void formations at depth exceeding 40m. Difficult drilling conditions including binding clays, voids and water flow in several holes.

Criteria	JORC Code explanation	Commentary
		• The 2020 infill drill program (RareX) involved drilling between historic drillholes to test continuity of grade. The program used a larger and more capable rig which resulted in good recoveries in most of the drilling with an averaged of greater than 90% sample recovery. • The cyclone was cleaned after every 3m drill run and where sticky clays were intersected, the driller would lift the hammer off the bottom and clean the cyclone after each metre. Wet samples were left open for water to evaporate. • All diamond drilling of PQ and HQ in the regolith was drilled with triple tube to increase recovery. • There is no relationship between RC or diamond drilling recovery and grade.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.* • *The total length and percentage of the relevant intersections logged.*	• All but three drill holes (NRC090-NRC093 for a total of 300 m) have had a geological log completed. • RareX geological logging was aided using geochemical analysis from a portable XRF. Geological logging includes weathering, regolith and protolith identification, mineral percentages, alteration, colour and texture. • RareX RC drilling has pXRF, magnetic susceptibility and recovery logs. • Diamond drill core drilled by RareX has geotechnical, structural, pXRF, recovery, photography and magnetic susceptibility logs. • All diamond drill metres have had geotechnical assessment by RareX staff. Rock strength, RQD, and rock hardness were measured and allocated numerical values that will be easily interrogated. • All of the above logs are quantitative with the exception of geological logs in the regolith which can be qualitative.

Criteria	JORC Code explanation	Commentary
		• The detail of logging is considered by the Competent Person to be appropriate for Mineral Resource estimation.

Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.*
	• *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.*
	• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*
	• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*
	• *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*
		• Competent drill core was either halved (HQ, NQ2) or quartered (PQ) using an Almonte core saw. Incompetent drill core was divided using a bolster.
		• Navigator Drilling NRC001-NRC0093 – 4 m composite spear samples were taken using a PVC spear. Assay intervals that returned results <1000 ppm Ce were then resampled. The 10% cone splits from the drill rig were then used for the 1m re-assays.
		• Kimberly Rare Earths (KRE) Drilling KRC094-KRC0170 - Drill metres were assayed on 1m intervals using a 10% cone split from the drill rig.
		• RareX Sampling:
		  ○ CRX0001-CRX0070 – entire Bulk samples were split down into 1-4 m composites using a 50/50 or 75/25 riffle splitter. All samples were dry before splitting.
		  ○ CRX0071-CRX0104 – 7% cone split from the drill rig was used for 1-4 m composites. Composite samples were combined using a riffle splitter. Wet samples were sampled as 1 m samples to avoid use of a splitter.
		  ○ All the above mentioned techniques are industry standard practice or better.
		  ○ Field duplicates were taken at an average of 1 in the RC drilling.
		  ○ Sample sizes are regarded as being appropriate for this style of mineralisation.
		  ○ The Competent Person considers the sampling techniques were appropriate for the style of mineralisation.

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• Navigator – 4 m composites were taken at the drill rig and sent to Intertek where a 4-acid digest, with ICP-OES and ICP-MS finish. Where 4m composites returned cerium assays >1000ppm, 1m re-assays were conducted on each of the metres in the composites. The 1 m re-assays were a peroxided fusion digest with ICP-OES and ICP-MS finish. This technique is considered as a total analysis for elements in consideration for this resource. 40 elements were assayed for. Laboratory QA/QC was completed with regular standards, blanks and repeats. • Kimberley Rare Earths used Intertek for the 1m assays using peroxided fusion digest with ICP-OES and ICP-MS finish. This technique is considered as a total analysis for elements in consideration for this resource. 30 elements were assayed for. Laboratory QA/QC was completed with regular standards, blanks and repeats. • RareX have used Nagrom for all assaying, using peroxided fusion digest with ICP-OES and ICP-MS finish. This technique is considered as a total analysis for elements in consideration for this resource. 34 elements were assayed for. For drill holes CRX0001-CRX0070 and CDX0002-CDX0019 a four-acid digest with an ICP-OES and ICP-MS finish was used for 13 indicator elements. Nagrom applied their own QA/QC with regular standards, blanks and repeats. RareX also applied regular standards, duplicates and blanks comprising 10% of the samples in RC assay batches and 6% in the diamond assay batches. • The quality of control procedures adopted by both the laboratories are in line with industry standards and acceptable levels of accuracy and precision have been established throughout the generations of assaying. • RareX's quality of control procedures are in line with industry standards and acceptable levels of accuracy and precision have been established from assay batches.

Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Verification of assays by alternative company personnel has occurred and checks, including a site visit, have been completed by CSA Global. • All assay results are reported to RareX in parts per million (ppm). RareX geological staff then convert the parts per million to ppm oxides using the below element to stoichiometric oxide conversion factors. La_2O_3 1.1728, CeO_2 1.2284, Pr_6O_{11} 1.2082, Nd_2O_3 1.1664, Sm_2O_3 1.1596, Eu_2O_3 1.1579, Gd_2O_3 1.1526, Dy_2O_3 1.1477, Ho_2O_3 1.1455, Er_2O_3 1.1435, Tm_2O_3 1.1421, Yb_2O_3 1.1387, Lu_2O_3 1.1371, Sc_2O_3 1.5338, Y_2O_3 1.2699, Nb_2O_5 1.4305, P_2O_5 2.2916.
Location of data points	• *Accuracy and quality of surveys used to locate drillholes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Drill hole collars have been surveyed with a DGPS and have and accuracy of 100 mm. • All coordinates are in MGA Zone 52H 2020 and have been converted from MGA94 and AMG84 grids. • Topographic control has been established from surveyed drill collars and are within 100 mm. The Cummins Range deposit is located on flat terrain.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Drill hole spacing is considered appropriate to gain a robust understanding of the mineralisation. The RareX exploration team are seeing the same geological positions mineralised along strike, suggesting RareX have a solid geological model. Drill spacing is considered appropriate to support an Inferred and Indicated Mineral Resource estimate. • 2 m to 4 m RC composites were completed in areas where higher grades were not expected.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of*	• Navigator (NRC0001-NRC0093), Kimberley Rare Earths (KRC0094-KRC0170) and RareX 2020 drill holes (CRX0001-CRX0048, CRX0050-CRX0058) were drilled at an acute angle to the dominant orientation of the fresh rock rare earths mineralisation. These drill holes are shallow holes and are

Criteria	JORC Code explanation	Commentary
	key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	mostly contained in the regolith profile where a combination of residual, or eluvial and chemical weathering have redistributed rare earths and phosphate in orientations that don't align with primary mineralisation. Recent geochemical modeling has established some hard and soft boundaries that will confine grade to certain shapes. • Holes drilled by RareX in 2021 and 2022 were drilled orthogonal to the strike of the carbonatite pipe, with drill hole azimuths of 050° or 230°.
Sample security	• *The measures taken to ensure sample security.*	• Drill samples are delivered to Halls Creek by RareX staff. Then the samples are transported from Halls Creek to Perth via a reputable transport company.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• The Competent Person (Mineral Resources) reviewed the sampling techniques during their 2022 site visit and recommended minor changes to the sub-sampling of RC samples, which were adopted by RareX. No other audits or reviews have occurred.

Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The Cummins Range REO deposit is located on tenement E80/5092 and is 100% owned by Cummins Range Pty Ltd which is a wholly owned subsidiary of RareX Ltd. Cummins Range Pty Ltd has purchased the tenement from Element 25 with a potential capped royalty payment of $1m should a positive PFS be completed within 36 months of purchase finalisation.

Criteria	JORC Code explanation	Commentary
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• CRA Exploration defined REO mineralisation at Cummins Range in 1978 using predominantly aircore drilling. Navigator Resources progressed this discovery with additional drilling after purchasing the tenement in 2006. Navigator announced a resource estimate in 2008. Kimberley Rare Earths drilled additional holes in 2012.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Cummins Range REO deposit occurs within the Cummins Range carbonatite complex which is a 2.0 km diameter near-vertical diatreme pipe that has been deeply weathered but essentially outcropping with only thin aeolian sand cover in places. The diatreme pipe consists of various mafic to ultramafic rocks with later carbonatite intrusions. The primary ultramafic and carbonatite rocks host low to high-grade rare-earth elements with background levels of 1000-2000 ppm TREO and high-grade zones up to 20% TREO. Disseminated apatite is through all rock types and is also contained in phoscorite. Above the carbonatite dykes is a well-developed regolith profile that extends to 100 m below the surface where a combination of residual, or eluvial and chemical weathering have redistributed and upgraded rare earths and phosphate. • QEMSCAN and MicroXRF results have showed that all the phosphate is contained in Apatite and Monazite. The Apatite contains low UTh, no cadmium and chlorine, and elevated levels of Fl that are well below acceptable limits. • QEMSCAN and MicoXRF have showed the REO in the Regolith are deporting mostly to monazite, with lesser amounts deporting to bastnaesite, crandallite, and REE intergrowths. • QEMSCAN and MicoXRF indicate the REO in the fresh rock are deporting to monazite, bastnaesite, parisite and REE intergrowths.
Drillhole information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for*	• All drill collar and intersection details for exploration results are contained within the report

Criteria	JORC Code explanation	Commentary
	all Material drillholes: ○ *easting and northing of the drillhole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *downhole length and interception depth* ○ *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• All drill hole details used in this Mineral Resource have been previously announced on the ASX between 2019 and 2023. • All holes drilled by Navigator, KRE and RareX have been used to support the Mineral Resource.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Weighted averages were used to calculate significant intercepts for the 15 Kimberley Rare Earth drill holes shown in Table 6. These intercepts were calculated using a 2.5% P_2O_5 cut with No more than 5m dilution. • No metal equivalent values were used in the announcement.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there*	• Navigator (NRC0001-NRC0093), Kimberley Rare Earths (KRC0094-KRC0170) and RareX 2020 drill holes (CRX0001-CRX0048, CRX0050-CRX0058) were drilled at an acute angle to the dominant orientation of the fresh rock rare earths mineralisation. These drill holes are shallow holes and are mostly contained in the regolith profile where a combination of residual, or eluvial and

Criteria	JORC Code explanation	Commentary
	should be a clear statement to this effect (e.g. 'downhole length, true width not known').	chemical weathering have redistributed rare earths and phosphate in orientations that don't align with primary mineralisation. Recent geochemical modelling has established some hard and soft boundaries that will confine grade to certain shapes. • RareX drill holes CRX0059-CRX0104 and CDX0001-CDX0050 have been drilled perpendicular to orientation of the carbonatite dykes and mineralisation
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Relevant diagrams are presented in the body of this report.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Reported exploration results are considered balanced.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Bio- availability tests on the phosphate `samples have returned up to 4 times the minimum acceptable limit for agricultural applications. The enhanced bioavailability of the apatite at Cummins Range means lower grade ore can become more economical to mine. • CSA Global have completed a geochemical study of the regolith and has resulted in classification of types of mineralisation. This study will be used for targeted metallurgical studies to optimise mining and processing methods. • The igneous rare earth mineralisation has significantly higher proportions of NdPr and heavy rare earths + scandium (HRE) in comparison to the later high-grade rare-earth mineralising event on

Criteria	JORC Code explanation	Commentary
		the Rare Dyke. On average the combined NdPr and HREO + Scandium content is 40% of the TREO.
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• A Mineral Resource estimate for the Phos Dyke, and including updates to the Rare Dyke, are expected in late April 2023, upon receipt of outstanding sample assays. • The Mineral Resource will be used to support an update to the Scoping Study, for completion in the first half of 2023. • Baseline Environmental studies have commenced with the instalment of 14 water monitoring bores in 2022. • The first phases of flora and fauna studies were completed in 2022, and a wet season assessment will commence in May, 2023.

Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, e.g. transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• The drill hole database is maintained by MX Deposit through Seequent. • Data used in the Mineral Resource was exported from the database to Microsoft Excel spreadsheets, containing relevant information for collar locations, downhole surveys, assay and sample logs of lithologies. • Assay tables were vetted for negative assay grades, with appropriate translations carried out (e.g. less than detection assays were converted to 0.5 x minimum assay grade). All data tables were loaded into Datamine which ran its own data validation steps, including checking for overlapping

Criteria	JORC Code explanation	Commentary
		sample intervals, missing collars or surveys, etc. Any errors were relayed to RareX who promptly corrected the data. Drill collars were compared to the topographic DTM with no significant elevation differences (>2 m) noted.

Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*
	• *If no site visits have been undertaken indicate why this is the case.*
		• The Competent Person, Mineral Resources, visited the Project between 25 and 26 October 2022. The following aspects of the Project development were reviewed, and considered to be acceptable for supporting the Mineral Resource estimate:
		  ○ Inspection of geological outcrop, and discussions with RareX geological staff
		  ○ Validation of a selection of drill hole collar surveys
		  ○ Discussions regarding Project development and future Mineral Resource development activities
		  ○ Form a judgement regarding the Reasonable Prospects for Eventual Economic Extraction test.

Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• RareX completed all geological modelling using Leapfrog software. The Leapfrog models were provided to CSA Global as dxf files and imported into Datamine for Mineral Resource modelling. • The confidence in the geological interpretation is reflected in the Mineral Resource classification levels assigned to the Mineral Resource estimate. • Geological models were based upon drill hole samples, including geological logs of lithology and weathering, and sample assays. • No alternative interpretations have been considered. • The geological models guided the Mineral Resource estimation, with sample populations for the total rare earth oxides and phosphate mineralisation statistically reviewed, and geological domains combined, or kept separate, as considered appropriate.

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		• The geological models provided by RareX extend along strike, across width and to a depth beyond the extents of the classified Mineral Resource. • The geological interpretation for the regolith zone has provided models for completely, strongly, moderately and weakly weathered zones, based upon geological logs and chemical assays of the samples. Two paleo-lakes ('pans') were modelled, infilled with sediment. A thin veneer cover of alluvial and/or elluvial sediments cover the deposit. • Within the strongly weathered domain are several other geochemical domains based upon geological and geochemical analyses of samples. These domains include silcrete, Mg-depletion and high phosphate zones. These domains were not included in this Mineral Resource estimate due to time constraints, but the sample analyses within the domains influenced the local block estimates. • The primary zone comprises clino-pyroxenite and carbonatite domains. • Grade continuity is primarily controlled by the strike, dip and plunge of local geology, both within the regolith (multiple weathering domains with flat lying to shallow dipping geometries) and within the carbonatite and pyroxenite (moderate dips).
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The Mineral Resource extends along strike (320°) 850 m, across strike 560 m, and extends down dip to a maximum of 500 m below surface. • The regolith mineralisation extends along strike 850 m, across strike 670 m, and extends down dip to a maximum of 90 m below surface.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a*	• Datamine Studio RM software was used for all geological modelling, grade interpolation, resource classification and reporting. Snowden Supervisor (v8.15) and GeoAccess Professional were used for geostatistical analyses.

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	description of computer software and parameters used. • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.*	• A block model with block sizes 12.5 m(X) x 12.5 m(Y) x 5 m(Z) was constructed, using the same flagging variables as used to flag the drillhole samples. The block size compares favourably with the 25 m x 25 m drill spacing in the majority of the Indicated classification domain. • A topographic DTM was used to deplete the block model at surface. • All drilling data obtained by Navigator, Kimberley Rare Earths and RareX was used to support the Mineral Resource estimate. Data obtained by CRA Exploration was not used due to quality control issues with the data. • Drillhole samples were flagged against the mineralisation wireframe solids, and appropriate Datamine variables were set to unique numeric values, for each wireframe solid. • Samples were composited to 1 m length and were used to interpolate all REO grades, plus P_2O_5, Sc_2O_3, Nb_2O_5, U_3O_8, ThO_2 into the block model using ordinary kriging interpolation techniques. Accessory oxides including CaO, Fe_2O_3, MgO and SiO_2 were also interpolated. • Statistical assessments of all the oxides were carried out on composited sample data which were flagged within the geological domains, to determine if oxides could be combined into larger domains. In this regard, the rare earth oxides within the completely weathered, moderately weathered and weakly weathered domains were combined into one domain. The strongly weathered domain was statistically determined to be a hard boundary for resource estimation. The pan domain is depleted by all REO and phosphate and is regarded to be a hard domain boundary. • An assessment of high-grade sample assays was carried out so that appropriate grade capping could applied.

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		• Normal scores variograms were modelled for most oxides from data in the regolith and primary domains. Low nugget effects of ≤10% were modelled for P_2O_5 and the REOs, short ranges of up to 60 m and long ranges of > 100 m were modelled. Primary directions for P_2O_5 within the regolith are shallowly plunging towards the west, and WNW for TREO. Within the primary zones, moderate plunges were modelled for TREO and P_2O_5 towards the west. • The completely weathered, moderately weathered and weakly weathered domains were combined into one domain for grade interpolation of REOs and P_2O_5. • Top cut and composited sample grades were interpolated into the block model using ordinary kriging. The Datamine fields LITHZON and WEATH were used to control grade interpolation with hard estimation boundaries between the individual regolith and primary lithologies, except where previously noted. • A search ellipse of 300 m (X) by 300 m (Y) by 70 m (Z) was used to select samples for grade interpolation for P_2O_5 within the strongly weathered zone, which hosts the highest grade P_2O_5 population in the Mineral Resource. A search ellipse of 250 m (X) by 150 m (Y) by 50 m (Z) was used to select samples for grade interpolation for the REOs within the strongly weathered zone. Search ellipse radii were determined from variogram ranges, and appropriate radii were determined for the other domains. • A minimum of 8 and maximum of 22 samples were used per block estimate. Search ellipse radii were increased when needed to ensure all blocks were interpolated, with the exception of the primary geology domains (pyroxenite and carbonatite) which only used a first pass estimate. • Oxides interpolated into the model are:

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		○ Light Rare Earth Oxides (LREO): La_2O_3, CeO2, Pr_6O_{11}, Nd_2O_3; and Heavy Rare Earth Oxides (HREO): Sm_2O_3, Eu_2O_3, Gd_2O_3, Tb_4O_7, Dy_2O_3, Ho_2O_3, Er_2O_3, Tm_2O_3, Yb_2O_3, Lu_2O_3; + Y_2O_3 ○ Sc_2O_3, P_2O_5, Nb_2O_5, ZrO_2, Al_2O_3, CaO, Fe_2O_3, MgO, SrO, ThO_2, U_3O_8, SiO_2. • Selective mining units were not adopted into the model. • Strong correlations were noted between the rare earth oxides, due to being hosted in the same mineral (Monazite). The REOs have very similar variogram models, and assumptions were made regarding common search ellipse radii and other interpolation parameters. • The block model was validated visually, by swath plots of selected REOs and P_2O_5, and comparing the mean block and sample grades per domain.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages are reported on a dry basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• A cut-off grade of 2.5% P_2O_5 was chosen to report the Mineral Resource based upon advice from RareX, who noted a similar cut-off grade was used for reporting other Phosphate Mineral Resources.

Criteria	JORC Code explanation	Commentary
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• A Scoping Study was completed in 2022 (ASX release, 12th September, 2022). This Scoping Study was completed on the 2021 resource of 18.9Mt @ 1.15% TREO and 10% P_2O_5. The key project financial metrics were positive and the preferred development path was to establish an open cut mine and flotation beneficiation facility at site producing a rare earth mineral concentrate and a phosphate mineral concentrate which is trucked along mainly sealed roads to Wyndham Port. At Wyndham Port, a hydroelectric powered rare earth refinery facility is envisaged which produces a mixed rare earth carbonate (MREC) product for export with a by-product of merchant grade phosphoric acid. • The Scoping Study was completed on a much smaller resource and focused on optimising TREO recovery. The new block model will be used to assess the potential for an open cut mining operation with a focus on both phosphate and TREO recovery. Recent metallurgical test work on the phosphate has delivered premium phosphate concentrate with greater than 39% P_2O_5 using conventional flotation circuits. Bioavailability tests on the phosphate has also shown strong bioavailability with up to 4 x the accepted industry standard. These results show that lower grade P_2O_5 can be mined to achieve a premium phosphate product. • Mining study work with the new resource will commence in April 2023.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• Phosphate flotation test on weathered and fresh rock material has produced concentrate grades of >39% P_2O_5 with >80% recovery. • Bioavailability tests of phosphate samples are up to 4 x the industry standard bioavailability indicating the potential to produce direct shipping ore and phosphate mineral concentrate.

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		• The September 2022 scoping study outlines a 15% TREO monazite concentrate from metallurgical testing. Since September, metallurgical programs have been focused on refining the process and results are expected in coming months.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• The Cummins Range Project is located on the northern edge of the Great Sandy Desert on flat terrain with no major drainages for kilometres in all directions. • Baseline studies have commenced with the instalment of 14 water monitoring bores in 2022. • The first phases of flora and fauna studies were completed in 2022, and a wet season assessment will commence in May, 2023. • Underground water in the project area is fresh and will be used for processing. Potential water sources will be assessed in 2023. • RareX have been working under a radiation management plan and background levels have been established using environmental dosimeters.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Bulk densities were determined using the water displacement method, with diamond core billets used. • The following means were calculated from the main modelled data: Cover (mean density 2.0 t/m^3, 6 samples), Pan (2.5 t/m^3, 0 samples, recommended value provided by RareX), completely weathered (2.2 t/m^3, 2 samples), strongly weathered (2.4 t/m^3, 161 samples), moderately weathered (2.6 t/m^3, 15 samples), weakly weathered (2.8 t/m^3, 7 samples); Primary pyroxenite (3.13 t/m^3, 330 samples), carbonatite (2.98 t/m^3, 365 samples).

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		• The bulk density mean values were assigned to the corresponding lithological domain codes in the block model.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The Mineral Resource is classified as a combination of Indicated and Inferred, with the Mineral Resource reported in accordance with the JORC Code, with geological and sampling evidence sufficient to assume geological and grade continuity within the volumes classified as Indicated. The classification levels are based upon an assessment of geological understanding of the deposit, geological and grade continuity, drillhole spacing, quality control results, search and interpolation parameters, and an analysis of available density information. The Indicated volumes cover the volumes with 25 m x 25 m drill spacing, and Inferred covers volumes with up to 100 m by 100 m drill spacing. • Mineral Resource classification was applied to the block model using a cookie cutter approach, with polygons digitised around drill samples from the regolith domains and using 'slope of regression' outputs (using values of >0.7 for Indicated) from the P_2O_5 kriging to guide the limits of the polygon. • Solid wireframe models were built capturing Indicated and Inferred volumes for the Primary zones, which were added to the block model and flagged with the appropriate resource classification. • The results appropriately reflect the Competent Person's view of the deposit.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• No audits or reviews of the current MRE have been undertaken apart from internal reviews carried out by CSA Global.
Discussion of relative	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the*	• Only OK and IDS methods were used to interpolate the grade variables, and no other estimated methods were used in parallel.

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accuracy/ confidence	*resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• Relevant tonnages and grade above nominated cut-off grades for P_2O_5 are provided in the introduction and body of this report. Tonnages were calculated by filtering all blocks above the cut-off grade and sub-setting the resultant data into bins by mineralisation domain. The volumes of all the collated blocks were multiplied by the dry density value to derive the tonnages. • The Mineral Resource is a local estimate, whereby the drillhole data was geologically domained, resulting in fewer drillhole samples to interpolate the block model than the complete drillhole dataset, which would comprise a global estimate.